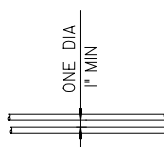
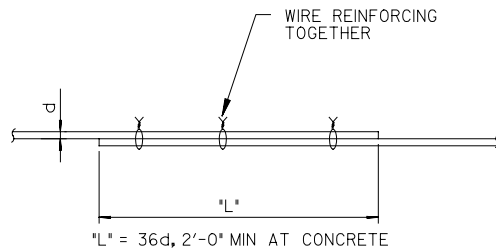
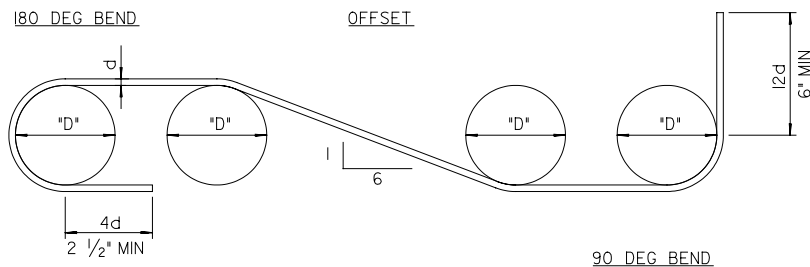


CONC. F'c P.S.I.	BAR SIZE										
	#3	#4	#5	#6	#7	#8	#9	#10			
	TENSION LAP SPLICES, INCHES										
4,000	25	33	41	49	69	81	91	103			

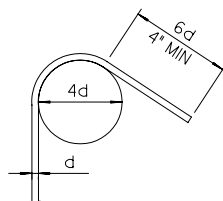
HARDROCK CONCRETE
F'y = 60,000 P.S.I. (CLASS "B")

NOTES:

1. SPLICE LENGTH SHALL BE DETERMINED FROM THE SIZE OF THE SMALLER BAR SPLICED.
2. DIVIDE BY 1.3 FOR NON-TOP BAR (LESS THAN 12" OF CONCRETE CAST BELOW)



BAR CLEARANCE

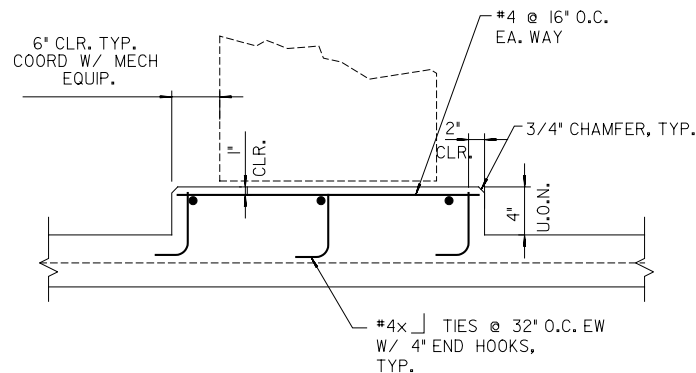


REINFORCING BAR BEND	
REINFORCING SIZE	BAR BEND DIAMETER ("D")
#3 TO #8	6d
#9 TO #11	8d
#14 TO #18	10d

NOTE:
CAP STIRRUPS MAY BE USED
WHENEVER 135° CLOSED
STIRRUPS ARE SHOWN IN
GRADE BEAM ONLY CAP STIRRUP

NOTE: ALL BENDS SHALL BE MADE COLD

TYPICAL BAR BENDS	C
NTS	VAR



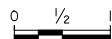
NOTES:

1. CONTRACTOR'S OPTION TO POUR PADS SEPARATELY FROM FLOOR SLAB AT PADS ON STRUCTURAL FLOOR.
2. EQUIPMENT ANCHORAGE EMBEDS ARE UNIQUE TO EACH PIECE OF EQUIPMENT, SEE DETAIL A, SHEET S-06.

EQUIP PAD DETAIL	B
NTS	VAR



WARNING



IF THIS BAR DOES
NOT MEASURE 1"
THEN DRAWING IS
NOT TO SCALE.

BROWN AND
CALDWELL

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL
APPROVED: _____ DATE: _____

SCALE	HORIZONTAL	NO SCALE
	VERTICAL	NO SCALE

**METROPOLITAN WASTEWATER
DEPARTMENT**
City of San Diego

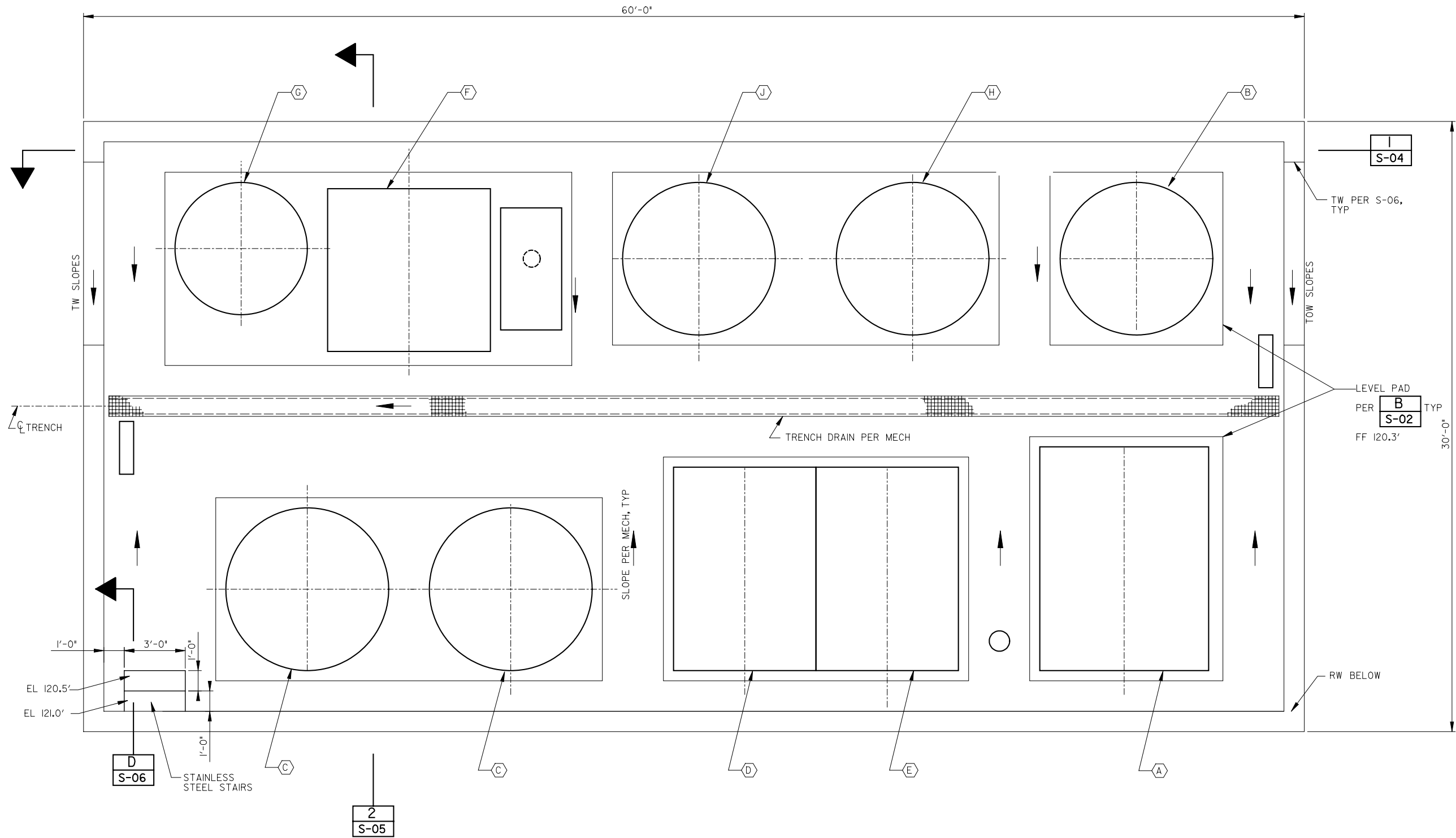
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**POINT LOMA WASTE WATER TREATMENT PLANT
BIOLOGICAL AERATED FILTER PILOT STUDY**

TYPICAL DETAILS


<p>CITY OF SAN DIEGO, CALIFORNIA SHEET 14 OF 22 SHEETS</p>					<table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%; border-bottom: 1px solid black;">WATER</td><td style="border-bottom: 1px solid black;">NA</td></tr><tr><td style="border-bottom: 1px solid black;">SEWER</td><td style="border-bottom: 1px solid black;">NA</td></tr><tr><td style="border-bottom: 1px solid black;">W.O.</td><td style="border-bottom: 1px solid black;"></td></tr></table>	WATER	NA	SEWER	NA	W.O.																																				
WATER	NA																																													
SEWER	NA																																													
W.O.																																														
<table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 40%; border-bottom: 1px solid black;">PROJECT MANAGER</td><td style="border-bottom: 1px solid black;">DATE</td></tr></table>					PROJECT MANAGER	DATE																																								
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<table style="width: 100%; border-collapse: collapse;"><tr><th style="width: 30%;">DESCRIPTION</th><th style="width: 5%;">BY</th><th style="width: 15%;">APPROVED</th><th style="width: 10%;">DATE</th><th style="width: 10%;">FILMED</th></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>					DESCRIPTION	BY	APPROVED	DATE	FILMED																																				<table style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; border-bottom: 1px solid black;">DESIGN ENGINEER</td></tr></table>	DESIGN ENGINEER
DESCRIPTION	BY	APPROVED	DATE	FILMED																																										
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<div>LAMBERT COORDINATES</div>																																														
<div style="font-size: 1.5em; font-weight: bold;">00000- 14 -D</div>																																														

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2/4/2005



- NOTES:
1. SEE

A
S-06

 FOR ANCHORAGE OF EQUIPMENT DESIGNATED .
 2. FOR HOUSEKEEPING PAD SEE

B
S-02
 3. LOCATION OF HOUSEKEEPING PADS AND EQUIPMENT PER MECHANICAL.

PLAN

1
-



WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

BROWN AND CALDWELL			
SUBMITTED:	PROJECT MANAGER	DATE:	
APPROVED:	BROWN AND CALDWELL	DATE:	
APPROVED:		DATE:	
SCALE	HORIZONTAL	3/8" = 1'-0"	
	VERTICAL	NONE	

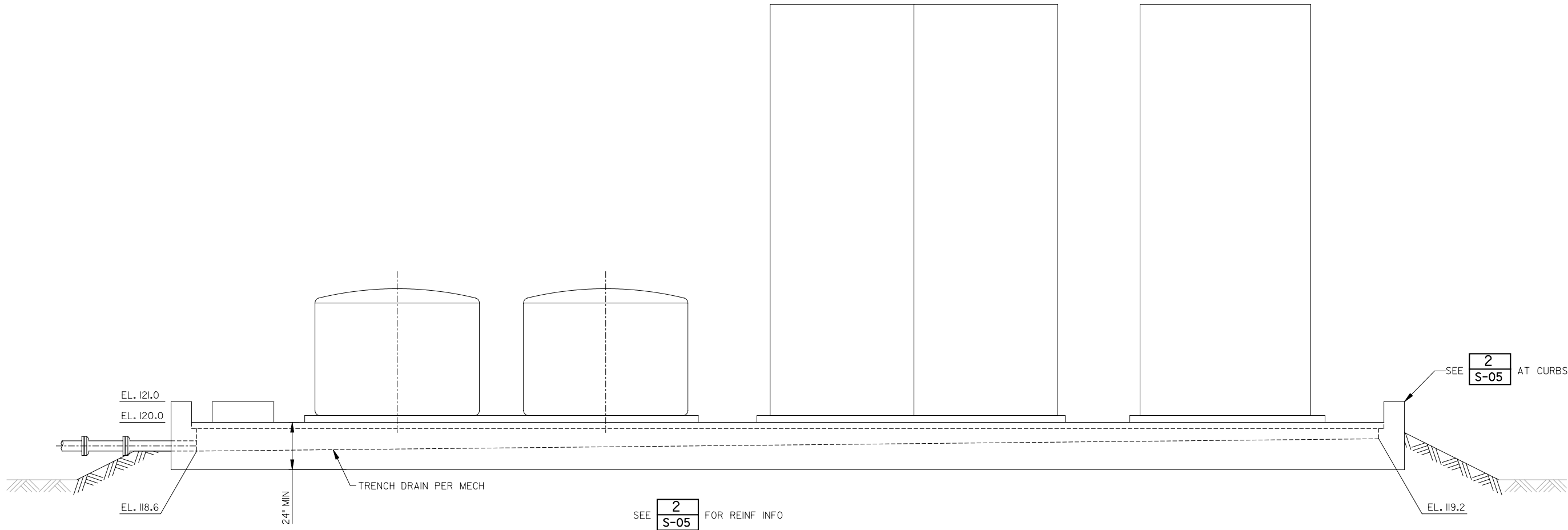
METROPOLITAN WASTEWATER DEPARTMENT
City of San Diego



DRAWING STATUS									
NO.	DATE	REQ.	REVISION	DESCRIPTION	DRAWN	CKD	APD	PE	EM

DRAWING NO. S-03		POINT LOMA WASTE WATER TREATMENT PLANT BIOLOGICAL AERATED FILTER PILOT STUDY	
SHEET NO. 15		FOUNDATION PLAN	
		CITY OF SAN DIEGO, CALIFORNIA SHEET 15 OF 22 SHEETS	
		WATER W.O. NA SEWER W.O. NA	
PROJECT MANAGER		DATE	
DESCRIPTION		BY	APPROVED
		DATE	FILMED
CONTRACTOR		DATE STARTED	
INSPECTOR		DATE COMPLETED	
		CONTROL CERTIFICATION	
		188-1692 LAMBERT COORDINATES	
		00000-15-D	

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2/14/2005



SECTION 1
S-03



WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

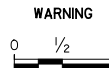
BROWN AND CALDWELL	
SUBMITTED: _____	PROJECT MANAGER: _____ DATE: _____
APPROVED: _____	BROWN AND CALDWELL DATE: _____
APPROVED: _____	DATE: _____
SCALE	HORIZONTAL 3/8" = 1'-0"
	VERTICAL NONE

METROPOLITAN WASTEWATER DEPARTMENT
City of San Diego



DRAWING STATUS									
NO.	DATE	REQ.	REVISION	DESCRIPTION	DRAWN	CKD	APD	PE	EM

DRAWING NO. S-04		POINT LOMA WASTE WATER TREATMENT PLANT BIOLOGICAL AERATED FILTER PILOT STUDY	
SHEET NO. 16		SECTION - I	
CITY OF SAN DIEGO, CALIFORNIA SHEET 16 OF 22 SHEETS		WATER W.O. NA SEWER W.O. NA	
PROJECT MANAGER _____ DATE _____		DESIGN ENGINEER _____	
DESCRIPTION BY APPROVED DATE FILMED		CONTROL CERTIFICATION	
CONTRACTOR _____ DATE STARTED _____		188-1692 LAMBERT COORDINATES	
INSPECTOR _____ DATE COMPLETED _____		00000- 16-D	



IF THIS BAR DOES
NOT MEASURE 1"
THEN DRAWING IS
NOT TO SCALE.

































SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL
APPROVED: _____ DATE: _____

SCALE	HORIZONTAL	$\frac{9}{8}'' = 1'-0''$
	VERTICAL	NONE

POINT LOMA WASTE WATER TREATMENT PLANT BIOLOGICAL AERATED FILTER PILOT STUDY					
SECTION - 2					
CITY OF SAN DIEGO, CALIFORNIA					WATER <u>NA</u>
SHEET 17 OF 22 SHEETS					SEWER <u>NA</u>
PROJECT MANAGER _____ DATE _____					_____
DESCRIPTION	BY	APPROVED	DATE	FILMED	DESIGN ENGINEER _____
					CONTROL CERTIFICATION _____
					188-1692
					LAMBERT COORDINATES _____
CONTRACTOR _____			DATE STARTED _____		00000- 17-D
INSPECTOR _____			DATE COMPLETED _____		

SECTION - 2

CONDUIT PLAN	SINGLE LINE DIAGRAM	SCHEMATIC DIAGRAM	DESCRIPTION
			CIRCUIT BREAKER. TRIP RATING AND NUMBER OF POLES INDICATED.
			THREE POSITION SWITCH. MAINTAINED CONTACT FUNCTION MAY VARY AS NOTED ON DIAGRAMS. CENTER POSITION IS OFF
			TWO POSITION SWITCH. MAINTAINED CONTACT FUNCTION MAY VARY AS NOTED ON DIAGRAMS
			MOMENTARY CONTACT PUSHBUTTON. FUNCTION MAY VARY AS NOTED ON DIAGRAMS
			MOMENTARY CONTACT PUSHBUTTON WITH PROVISION FOR LOCKOUT.
			LOCKABLE DISCONNECT SWITCH. RATING AND DETAILS AS NOTED ON DRAWINGS.
			LIMIT SWITCH. NORMALLY OPEN
			LIMIT SWITCH. NORMALLY CLOSED
			TIME DELAY RELAY CONTACT, OFF DELAY, NORMALLY OPEN, TIME OPEN
			TIME DELAY RELAY CONTACT, OFF DELAY, NORMALLY CLOSED, TIME CLOSED
			TIME DELAY RELAY CONTACT, ON DELAY, NORMALLY OPEN, TIME CLOSED
			TIME DELAY RELAY CONTACT, ON DELAY, NORMALLY CLOSED, TIME OPEN
			SOLENOID OPERATED VALVE
			MOTOR CONTROL CENTER DRAWOUT STABS
			MOTOR STARTER WITH THERMAL OVERLOADS. NUMBER INDICATES NEMA SIZE
			MOTOR OVERLOAD CONTACT
			MOTOR, NUMBER INDICATES HORSEPOWER
			INDICATING LIGHT, PUSH-TO-TEST. LETTER INDICATES COLOR. R=RED B=BLUE G=GREEN A=AMBER W=WHITE
			CONTACTOR OR RELAY COIL. LETTER OR NUMBER IS DESIGNATION
			NORMALLY CLOSED CONTACT. LETTER OR NUMBER IS DESIGNATION
			NORMALLY OPEN CONTACT. LETTER OR NUMBER IS DESIGNATION
			RUNNING TIME METER, NON-RESETTABLE
			FUSE, NUMBER INDICATES RATING
			CONTROL TRANSFORMER. RATING AS NOTED ON DRAWINGS OR AS REQUIRED BASED ON LOAD SERVED.
			KILOWATT METER
			PRESSURE SWITCH. CONTACT ACTION AS NOTED ON DRAWINGS

CONDUIT PLAN	SINGLE LINE DIAGRAM	SCHEMATIC DIAGRAM	DESCRIPTION
			POWER TRANSFORMER, RATINGS AS NOTED ON DRAWINGS
			DUPLEX RECEPTACLE, 20A, SPEC GRADE GROUNDING TYPE, UNLESS OTHERWISE NOTED ON DRAWINGS.
			TELEPHONE OUTLET
			JUNCTION BOX OR CONDUIT FITTING AS NOTED OR REQUIRED.
			LEVEL SWITCH, CONTACT ACTION AS NOTED ON DRAWINGS
			CONTROL PANEL OR EQUIPMENT AS NOTED
			FLOW SWITCH, CONTACT ACTION AS NOTED ON DRAWINGS
			FLUSH TOGGLE SWITCH, SINGLE POLE, SINGLE THROW
			FLUSH TOGGLE SWITCH, THREE WAY
			FLUORESCENT FIXTURE, SEE LIGHTING SCHEDULE.
			LIGHTING FIXTURE, WALL MOUNTED SEE LIGHTING SCHEDULE
			MH-MANHOLE PB-PULLBOX HH-HANDHOLE OR AS NOTED ON DRAWINGS
			TELEPHONE CONDUIT, SIZE AS NOTED
			GROUNDING GRID OR GROUNDING CONDUCTOR SIZE AS REQUIRED OR AS NOTED ON DRAWINGS
			GROUND PIGTAIL, SIZE AS NOTED ON DRAWINGS
			EXOTHERMIC GROUND CONNECTION
			BOLTED GROUND CONNECTION
			CONDUIT BENDING UP
			CONDUIT BENDING DOWN
			UNDERGROUND OR CONCEALED CONDUIT
			EXPOSED CONDUIT.
			HOMERUN CONDUIT WITH 3 CONDUCTORS, NEUTRAL(S) AND GROUND, PANEL 'PBI'-CIRCUITS 1,3,5. MINIMUM CONDUIT SIZE SHALL BE 3/4" UON, NO HASH MARKS INDICATES 3/4" (2) #12 + (1) #12G
			DRIVEN GROUND ROD/TEST WELL 3/4" X 10' Cu CLAD STEEL
			PANELBOARD OR AS NOTED ON DRAWING
			LIQUIDTIGHT FLEXIBLE CONDUIT
			CONDUIT NUMBER 'XXX', REFER TO CONDUIT SCHEDULE FOR DESCRIPTION

CONDUIT PLAN	SINGLE LINE DIAGRAM	SCHEMATIC DIAGRAM	DESCRIPTION
\$ ^M			MANUAL MOTOR STARTER
			GROUND
			HEATER, RATING AS NOTED ON DRAWING
			HORN OR AUDIBLE SIGNAL
Ø	Ø	Ø	PHASE
			TERMINAL
			MAGNETIC DOOR SWITCH
			CONDUIT STUB OUT
			FUSED DISCONNECT SWITCH, XX = AMP RATING

GENERAL NOTES:

1. EXPOSED RACEWAYS SHALL BE RIGID GALVANIZED STEEL.
2. UNDERGROUND RACEWAYS SHALL BE ROUTED 24" BELOW GRADE. RACEWAYS SHALL BE PVC SCHEDULE 40 AND ENCASED IN SLURRY AT ROADWAYS.

AC	AMPERES	MIN	MINIMUM OR MINUTE
AF	ALTERNATING CURRENT	MLO	MAIN LUGS ONLY
AFC	AMPERE FRAME	MOV	MOTOR OPERATED VALVE ACTUATOR
AFB	ABOVE FINISHED CONCRETE	MTG	MOUNTING
AFG	ABOVE FINISHED FLOOR	MTR	MOTOR
AT	ABOVE FINISHED GRADE	N	NEUTRAL
ATS	AMPERE TRIP	NA	NON-AUTOMATIC
AUX	AUTOMATIC TRANSFER SWITCH	NC	NORMALLY CLOSED
AUTO	AUXILIARY	NCIO	NORMALLY CLOSED, INSTANTANEOUS OPEN
AWG	AUTOMATIC		
BC	AMERICAN WIRE GAUGE	NCTC	NORMALLY CLOSED,
BD	BARE COPPER		TIME CLOSE
BDR	BOARD	NCTO	NORMALLY CLOSED,
BKR	BREAKER		TIME OPEN
C	CONDUIT	NEC	NATIONAL ELECTRIC CODE
CAB	CABINET	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NO	NUMBER
CKT	CIRCUIT	NO	NORMALLY OPEN
CLG	CEILING	NOIC	NORMALLY OPEN,
C.O.	CONDUIT ONLY		INSTANTANEOUS CLOSE
COMPT	COMPARTMENT	NOTC	NORMALLY OPEN,
COND	CONDUCTOR		TIME CLOSE
CONT	CONTROL	NOTO	NORMALLY OPEN,
CONTD	CONTINUED		TIME OPEN
CPT	CONTROL POWER TRANSFORMER	NP	NAMEPLATE
CP	CONTROL PANEL	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER	OL	OVERLOAD
CU	COPPER	OTT	OVERTEMP SWITCH
CR	CONTROL RELAY	PB	PUSHBUTTON
DC	DIRECT CURRENT	PB	PULLBOX
DISC	DISCONNECT	PC	PHOTOCELL
DISC SW	DISCONNECT SWITCH	PCV	PUMP CONTROL VALVE
DPDT	DOUBLE POLE DOUBLE THROW	PMR	POWER MONITOR RELAY
DPST	DOUBLE POLE SINGLE THROW	PNL	PANEL
DWG	DRAWING	POS	POSITION
DS	DOOR SWITCH	PR	PAIR
ELEV	ELEVATION	PRI	PRIMARY
ELEV	ELEVATION	PS	PRESSURE SWITCH
EMT	ELECTRICAL METALLIC TUBING	PT	POTENTIAL TRANSFORMER
EO	ELECTRICALLY OPERATED	PVC	POLYVINYL CHLORIDE
ES	EMERGENCY STOP	PVC/RGS	PVC JACKETED RIGID
	EXISTING		
FBO	FURNISHED BY OWNER	PW	PART WINDING
FDR	FEEDEE	RECEP	RECEPTACLE
FIN	FINISHED	RGS	RIGID GALVANIZED STEEL CONDUIT
FLA	FULL LOAD AMPS	RTU	REMOTE TERMINAL UNIT
FLEX	FLEXIBLE	RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
FM	FLOW METER	RYVD	REDUCED VOLTAGE WYE DELTA
FS	FLOW SWITCH	SDG&E	SAN DIEGO GAS AND ELECTRIC COMPANY
FT OR ' /	FEET OR FOOT	SEC	SECONDARY
FT	FLOW TRANSMITTER	SEL	SELECTOR
FUTR	FUTURE	SP	SPARE
FVNR	FULL VOLTAGE NON REVERSING	SPEC	SPECIFICATION
GALV	GALVANIZED	SS	STAINLESS STEEL
GD	GAS DETECTORS	SPDT	SINGLE POLE DOUBLE THROW
GFI	GROUND FAULT INTERRUPTER	SPST	SINGLE POLE SINGLE THROW
GFP	GROUND FAULT PROTECTION	ST	SHUNT TRIP
GND OR G	GROUND	STA	STATION
HH	HANDHOLE	STL	STEEL
HOA	HAND/OFF/AUTO	STP	SHIELDED TWISTED PAIR
HTR	HEATER	STR	STARTER
IC	INTERRUPTING CURRENT	STT	SHIELDED TWISTED TRIPLET
IN OR "	INCHES OR INCH	SV	SOLENOID VALVE
IND	INDICATING	SW	SWITCH
INST	INSTANTANEOUS	SWBD	SWITCHBOARD
INSTR	INSTRUMENT	TB	TERMINAL BOX
INTLK	INTERLOCK	TEL	TELEPHONE
JB OR J	JUNCTION BOX, CONDULET OR FITTING AS REQUIRED BY NEC. UNLESS OTHERWISE NOTED	TEMP	TEMPERATURE
		TERM	TERMINAL
KW	KILOWATTS	TM	TELEMETRY
LCL	LONG CONTINUOUS LOAD	TS	TEMPERATURE SWITCH
LCP	LOCAL CONTROL PANEL	TS2W	TWO SPEED TWO WINDING
LEV	LEVEL	TW/SH	TWISTED SHIELDED
LIM	LIMIT	TYP	TYPICAL
LR	LOCAL/REMOTE	UG	UNDERGROUND
LOS	LOCKOUT STOP STATION	UON	UNLESS OTHERWISE NOTED
LS	LEVEL OR LIMIT SWITCH	V	VOLTS
LT	LIGHT	W	WATTS
LTG	LIGHTING	W/	WITH
LV	LOW VOLTAGE	W/O	WITHOUT
LV	LOW VOLTAGE	WP	WEATHERPROOF
MA	MILLIAMPERE	XFMR	TRANSFORMER
MAINT	MAINTAINED	XP	EXPLOSION PROOF
MAN	MANUAL	ZS	POSITION SWITCH OR PROXIMITY SWITCH
MAX	MAXIMUM	3W	THREE WIRE
MC	MAINTAINED CONTACT	4W	FOUR WIRE
MCC	MOTOR CONTROL CENTER		
MCM	THOUSAND CIRCULAR MILS		
MCP	MOTOR CIRCUIT PROTECTOR		
MH	MANHOLE		

DRAWING NO. E-01		POINT LOMA WASTE WATER TREATMENT PLANT BIOLOGICAL AERATED FILTER PILOT STUDY				WATER W.O. NA SEWER W.O. NA					
SHEET NO. 19								ELECTRICAL SYMBOLS AND ABBREVIATIONS			
		CITY OF SAN DIEGO, CALIFORNIA									
		SHEET 19 OF 22 SHEETS									
		PROJECT MANAGER _____				DATE _____					
		DESCRIPTION		BY	APPROVED	DATE	FILMED				



A horizontal number line with endpoints labeled 0 and 1. A tick mark is placed at the midpoint, labeled $\frac{1}{2}$.

IF THIS BAR DOES
NOT MEASURE 1"
THEN DRAWING IS
NOT TO SCALE.

BROWN AND
CALDWELL

SUBMITTED: _____ DATE: _____
PROJECT MANAGER
APPROVED: _____ DATE: _____
BROWN AND CALDWELL
APPROVED: _____ DATE: _____

SCALE

HORIZONTAL	NONE
VERTICAL	NONE

**METROPOLITAN WASTEWATER
DEPARTMENT**
City of San Diego

[illegible]

PROJECT MANAGER _____		DATE _____			_____
DESCRIPTION	BY	APPROVED	DATE	FILMED	DESIGN ENGINEER _____
					CONTROL CERTIFICATION _____
					188-1692
					LAMBERT COORDINATES
CONTRACTOR _____		DATE STARTED _____			00000-19-D
INSPECTOR _____		DATE COMPLETED _____			